RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING:

Wisconsin Department of Transportation
DT1241 2009

Research, Development and Technology Transfer		
Program: (Choose One) ☐ **Policy Research** ☐ **Pooled Fund** **TPF #** ☒ **Wisconsin Highway Research Program** ☐ **Other**		
Project Title: Evaluation of the Foundation Movements of Transportation Structures		
Administrative Contact/Phone #: Peg Lafky / (608)266-3663	**WisDOT Project ID(s):**	0092-09-05
WisDOT Technical Contact/Phone #: Robert Arndorfer / (608)246-7940	**Other Project ID:**	
Project Investigator/Phone # (agency & contact): James Schneider (jamess@cae.wisc.edu) 608-890-2662	**Approved Starting Date:**	2/5/2009
WisDOT Comments:	**Original End Date:**	2/5/2012
	Current End Date:	2/5/2012
Sponsor: Wisconsin Department of Transportation	**Number of Extensions:**	0

Schedule Status:

☒ On schedule ☐ Ahead of schedule
☐ On revised schedule ☐ Behind schedule (Please explain below)

Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
$109,893.00	$14,219.27	$14,219.27	13%	8%

Project Description:
The overall research objective of this study is to produce a document summarizing simplified design procedures for evaluation of foundation movements for transportation structures within the LRFD framework. Recommendations for the measurement and selection of input parameters for those design procedures will also be provided.

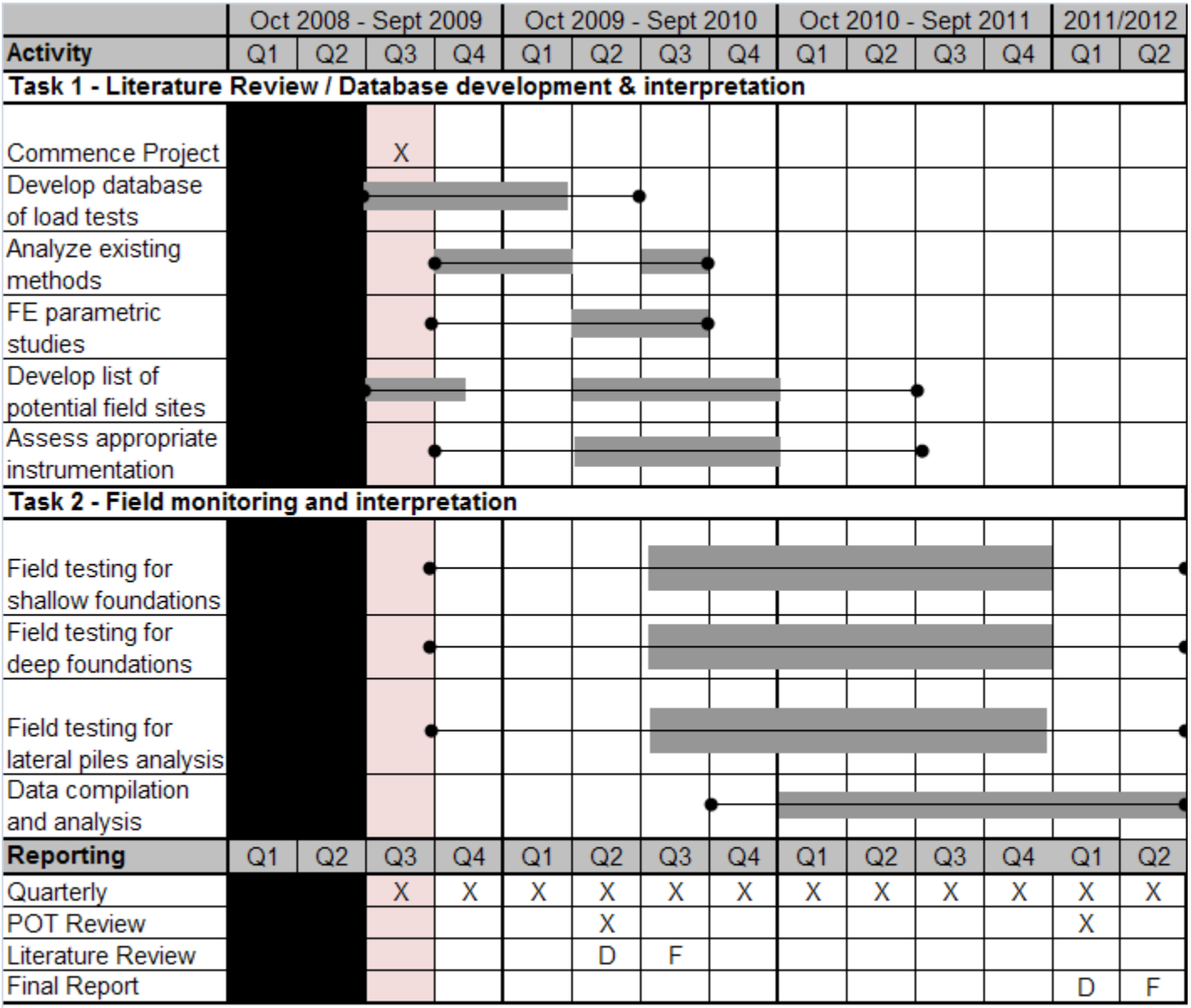
Progress This Quarter: (Includes project committee meetings, work plan status, contract status, significant progress, etc.)
The project consists of five main tasks (1) Literature Review and Database Development; (2) Field Monitoring of Shallow Foundations; (3) Field Monitoring of Deep Foundations; (4) Field Monitoring of Laterally Loaded Piles; and (5) Data Compilation and Analysis. Over the past quarter efforts have focused on Task 1, Literature Review and Database Development, as well as issues related to Tasks 2 through 4. Progress has been made towards compilation and analysis of a database of load tests on axially loaded deep and shallow foundations as well as laterally loaded foundations, assessment of design method formulations and performance, and finite element analysis of in situ tests and foundation response. Laboratory scale studies of remote deformation measurement instrumentation have been started. Telemetry systems are being researched and weatherization of the equipment is being performed.

A technical paper discussing application of LRFD methods to deep foundation design has been submitted and accepted for publication in the proceedings of the 2009 Deep Foundations annual conference:
Schneider, J.A. 2009. “Uncertainty and bias in evaluation of LRFD ultimate limit state for axial loading of driven piles,” DFI Annual Conference on Deep Foundations, accepted.

Anticipated Work Next Quarter:
The major tasks for next quarter are (i) instrumentation development and weatherization; (ii) identify potential field sites for instrumentation; (iii) work with contractors to potentially install instrumentation at a site; and (iv) continue with literature review and database development.

Circumstances Affecting Progress and/or Budget:
The project start date was delayed from October 2008 until February 2009. This may affect timing with regards to instrumentation of field sites.

Gantt Chart:



D = Draft Report; F = Final Report

Project not started until February 2009